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CLAIMS:

What is claimed is:

1 1. A method of improving performance in a Java computer
2 program, comprising the steps of:
3 obtaining information associated with garbage
4 collection; and
5 deducing changes in performance that will result
6 from modifying the Java computer program.

1 2. The method of claim 1, wherein a cost of garbage
2 collection to program performance is estimated using a
3 duration of an average garbage collection event and a
4 frequency of garbage collection events.

1 3. The method of claim 2, wherein the cost of garbage
2 collection is reduced by reducing either or both of the
3 duration and frequency.

1 4. The method of claim 2, wherein the duration depends
2 on an amount of garbage that must be cleaned up, an
3 algorithm used to do the collecting or copying, a heap
4 compaction, a cost of reconciling object references that
5 are moved, and a number of finalizers that must be
6 executed.

1 5. The method of claim 2, wherein the frequency depends
2 on the rate of object creation, the heap fragmentation,
3 the size of the heap, and the garbage collection policy.

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1 6. The method of claim 1, wherein the Java computer
2 program is changed by reducing memory from a footprint of
3 the Java computer program.

1 7. The method of claim 6, wherein given the amount of
2 memory to be reduced from the footprint, a total duration
3 for a run, and how much of the run is spent in garbage
4 collection, the number of additional transactions that
5 can be computed during the run is determined.

1 8. The method of claim 7, wherein the information
2 associated with garbage collection is obtained from a
3 verbosegc.

1 9. The method of claim 1, further comprising the step
2 of:
3 modifying the Java computer program.

1 10. A computer system capable of running a Java program,
2 comprising:
3 a garbage heap associated with garbage collection
4 events, wherein garbage collection events have an average
5 duration and frequency;
6 instructions for estimating changes in performance
7 resulting from modification of the Java program using
8 information obtained about the garbage collection events.

1 11. The system of claim 10, wherein a cost of garbage
2 collection is reduced by reducing either or both of the
3 duration and frequency.

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1 12. The system of claim 11, wherein the duration depends
2 on an amount of garbage that must be cleaned up, an
3 algorithm used to do the collecting or copying, a heap
4 compaction, a cost of reconciling object references that
5 are moved, and a number of finalizers that must be
6 executed.

1 13. The system of claim 11, wherein the frequency
2 depends on the rate of object creation, the heap
3 fragmentation, the size of the heap, and the garbage
4 collection policy.

1 14. The method of claim 10, wherein the Java computer
2 program is changed by deducting memory from a footprint
3 of the Java computer program.

1 15. The method of claim 14, wherein given the amount of
2 memory to be deducted from the footprint, a total
3 duration for a run, and how much of the run is spent in
4 garbage collection, the number of additional transactions
5 that can be computed during the run is determined.

1 16. The method of claim 15, wherein the information
2 associated with garbage collection is obtained from a
3 verbosegc.

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1 17. A computer program product in a computer readable
2 medium for improving performance in a Java computer
3 program, comprising the steps of:
4 first instructions for obtaining information
5 associated with garbage collection;
6 second instructions for deducing changes in
7 performance that will result from modifying the Java
8 computer program;
9 wherein the Java computer program is changed by
10 deducting memory from a footprint of the Java computer
11 program.

1 18. The method of claim 17, wherein a cost of garbage
2 collection to program performance is estimated using a
3 duration of an average garbage collection event and a
4 frequency of garbage collection events.

1 19. The method of claim 18, wherein the cost of garbage
2 collection is reduced by reducing either or both of the
3 duration and frequency.

1 20. The method of claim 18, wherein the duration depends
2 on an amount of garbage that must be cleaned up, an
3 algorithm used to do the collecting or copying, a heap
4 compaction, a cost of reconciling object references that
5 are moved, and a number of finalizers that must be
6 executed.

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1 21. The method of claim 18, wherein the frequency
2 depends on the rate of object creation, the heap
3 fragmentation, the size of the heap, and the garbage
4 collection policy.

1 22. The method of claim 17, wherein given the amount of
2 memory to be deducted from the footprint, a total
3 duration for a run, and how much of the run is spent in
4 garbage collection, the number of additional transactions
5 that can be computed during the run is determined.

1 23. The method of claim 22, wherein the information
2 associated with garbage collection is obtained from a
3 verbosegc.